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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/669,259	09/25/2003	Kenichi Takahashi	018775-876	3219

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EXAMINER
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HUNG, YUBIN

ART UNIT	PAPER NUMBER
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2624

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/03/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

<b>Office Action Summary</b>	Application No.	Applicant(s)	
	10/669,259	TAKAHASHI ET AL.	
	Examiner	Art Unit	
	Yubin Hung	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-3 is/are allowed.
- 6) ☒ Claim(s) 4, 5, 7 and 10 is/are rejected.
- 7) ☒ Claim(s) 6, 8 and 9 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 9/25/03 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. ____                                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>9/25/03</u> .   | 6) <input type="checkbox"/> Other: ____                           |

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:  
  
The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
2. Claim 10 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
3. Claim 10 recites the limitation "said detector" in line 11 and "said determiner" in lines 13 and 15. There is insufficient antecedent basis for this limitation in the claim.

### ***Double Patenting***

4. Claims 8 and 9 are objected to under 37 CFR 1.75 as being a substantial duplicate of claims 1 and 6, respectively. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claim 10 is rejected under 35 U.S.C. 102(e) as being anticipated by Atsumi et al. (US 6,801,665).

Regarding claim 10, Atsumi discloses a method for processing compressed image data divided to a plurality of tiles [Fig. 13; Col. 24, lines 14-15], comprising

- detecting an existence status of ROI set within said compressed image data  
[Fig. 13 and Col. 24, lines 21-39 (adding tags identifying block, or tile, types to encoded data); Fig. 12 (decoding process) and Col. 24, line 62-Col. 25, line 7 (detecting ROI existence status). Note that for each tile the tag determines the existence status of ROI]
- determining whether each tile is a ROI tile composed of only ROI, a non-ROI tile composed of only non-ROI, or a ROI boundary tile composed of ROI and non-ROI based on said existence status of ROI detected by said detector  
[Fig. 13 and Col. 24, lines 21-39 (adding tags identifying block, or tile, types to encoded data); Col. 24, line 62-Col. 25, line 7 (determining tile type). Note that for each tile the flag also determines its type]
- performing a first process for said ROI tile and said non-ROI tile determined by said determiner, and which performs a second process for said ROI boundary tile determined by said determiner

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[Fig. 12, ref. 1206 and Col. 23, lines 56-58 & 62-64; Fig. 13, flowcharts for encoding  $R^c$  and  $R^o$  (corresponding to ROI and non-ROI tiles, respectively) and R (corresponding to ROI boundary tiles); Col. 24, lines 21-39 (different encoding for different types of tiles); Col. 24, line 62-Col. 25, line 1 and Col. 25, lines 5-7 (corresponding decoding). Note that the process of Col. 24, line 66-Col. 25, line 1 is considered the first process and the process described in Col. 25, lines 5-7 is considered the second process]

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Atsumi et al. (US 6,801,665).

9. Regarding claim 7, per the analysis of claim 10 above Atsumi discloses a method that comprises all functions performed by the apparatus of claim 7. Atsumi further discloses using an apparatus to implement a decoding method in which different functions are performed by different modules [Fig. 17]. One of ordinary skill at the time the invention was made would therefore be motivated to implement the method recited in claim 10 in an apparatus such that its detecting, determining and performing functions

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are executed in different modules. The motivation would have been to be able to actually put the method to use so as to realize its intended purpose.

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10. Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Atsumi et al. (US 6,801,665), and further in view of Kato (US 6,665,446).

11. Regarding claim 4, note that per the analyses of claims 7 and 10 Atsumi teaches the following (note that per the analysis of claim 10 the basic processing units are tiles):

- A detector which detects an existence status of ROI set within said compressed image data
- A determiner which determines whether each tile is a ROI tile composed of only ROI, a non-ROI tile composed of only non-ROI, or a ROI boundary tile composed of ROI and non-ROI based on said existence status of ROI detected by said detector

Atsumi further discloses/teaches

- a processor which performs a specific process for frequency transform coefficients of ROI and non-ROI within each tile determined by said determiner  
[Fig. 12, ref. 1206 and Col. 23, lines 56-58 & 62-64; Fig. 13, flowcharts for encoding  $R^c$  and  $R^o$  (corresponding to ROI and non-ROI tiles, respectively) and  $R$  (corresponding to ROI boundary tiles); Col. 24, lines 21-39 (different encoding for different types of tiles); Col. 24, line 62-Col. 25, line 7 (corresponding decoding)]

Atsumi does not expressly disclose that the tiles are from the luminance and the color difference components of the image data.

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However, Kato discloses wavelet transform coefficients comprising the luminance and the color difference components [Fig. 2, refs. S101-S105] and decoding those components [Fig. 4, refs. 123a-123c; Col. 5, lines 2-11]. Therefore it would have been obvious to one of ordinary skill in the art to be motivated to process the coefficients for tiles of all components (luminance and color difference) because in transform coding the components of a color image are typically encoded separately and therefore the encoding results for all three color components need to be decoded to reconstruct the image, i.e., tiles of all components need to be processed.

Therefore it would have been obvious to combine Kato with Atsumi to obtain the invention as specified in claim 4.

12. Regarding claim 5, Atsumi further discloses

- wherein said detector detects the existence status of ROI set based on a frequency transform coefficient of said tile for every tile [Fig. 12, refs. 1202 & 1203 and Col. 23, lines 24-32. Note that whether a coefficient belong to the ROI is detected. Note further that as discussed above the basic processing unit is tile].

***Allowable Subject Matter***

13. [Examiner's observation: Regarding claim 1, the processor for shifting coefficients also shifts ROI coefficients for non-ROI tiles (lines 13-15). Since by definition non-ROI tiles contain no ROI coefficients, no coefficients in non-ROI tiles are

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shifted; therefore the limitation of shifting transform coefficients of ROI in non-ROI tiles appears to be a vacuous one. This observation applies to claim 8 as well.]

14. Claims 1-3 are allowed.

15. [Regarding claim 6, note that per a phone interview with applicant's representative Mr. John Darling on 03/20/07 seeking clarification, the claim is interpreted with "of non-ROI tile" inserted between "color difference component" and "determined" in line 7 of the claim. This is supported by, for example, Fig. 11B.]

16. Claims 6 (as interpreted), 8 and 9 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

17. The following is a statement of reasons for the indication of allowable subject matter:

A. Regarding claim 1, and similarly claims 6, 8 and 9, closest art of record do not disclose all limitations. Specifically, Atsumi et al. (US 6,801,665), Christopoulos et al. (US 6,804,405, in Fig. 5 and Col. 5, lines 3-10), Sato et al. (US 6,985,632, in Figs. 19, 20A-20C and Col. 15: 52-Col. 16, line 44), Maeda et al. (US 6,968,088, in Figs. 1, 2A-2C, 7 and Col. 15, lines 39-57, Grosbois et al. ("New Approach to JPEG 2000



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Compliant Region of Interest Coding," SPIE, Vol. 4472, 2001, pp. 267-275) and Wang et al. ("Bitplane-by-Bitplane Shift (BbBShift)—A suggestion for JPEG2000 Region of Interest Image Coding," IEEE Signal Processing Letters, Vol. 9, No. 5, May 2002, pp. 160-162) disclose various ways of shifting coefficients in the ROI. However, none of the above-cited references, alone or in combination, disclose, teach or suggest shifting all coefficients (i.e. both the ROI and the non-ROI coefficients) in ROI boundary tiles. In the case of claim 6 (and similarly claim 9), none of the references cited above, alone or in combination, disclose, teach or suggest processing the tiles (i.e., shifting the coefficients) from the luminance and the color difference components differently, either.

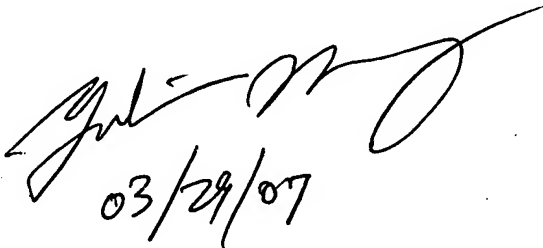
#### ***Contact Information***

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yubin Hung whose telephone number is (571) 272-7451. The examiner can normally be reached on 7:30 - 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew C. Bella can be reached on (571) 272-7778. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



03/29/07

Yubin Hung  
Patent Examiner  
Art Unit 2624  
March 29, 2007